



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,490	04/30/2001	Benjamin Niles Eldridge	P6D2-US	5397
50905	7590	04/22/2005	EXAMINER	
N. KENNETH BURRASTON KIRTON & MCCONKIE P.O. BOX 45120 SALT LAKE CITY, UT 84145-0120			ARBES, CARL J	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/846,490

Applicant(s)

ELDRIDGE ET AL.

Examiner

C. J. Arbes

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37,38 and 40-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37,38 and 40-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date hereto.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

COMES NOW the Patent Office, by Patent Examiner and expounds its reasons for the legal rejections of each of the claims drawn hereinbelow.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 44 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Carver (Pat No. 4,916,002) hereinafter Carver For a discussion of what Carver teaches the reader is referred to the statements made immediately *infra*.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37, 38, 40-43 and 45-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carver (Pat. No. 4,916,002) hereinafter Carver.

Carver teaches *inter alia* a method of forming a microminature tip structure on a surface of a silicon wafer, , depositing at least one layer of at least one conductive tip material into the opening to form tip structures, joining the tip structure to a contact structure and releasing the tip structure from the Silicon wafer. A first material e.g. Silicon dioxide is deposited on the wafer. Then a Silicon nitride layer is sputtered over the Silicon dioxide layer .and is patterned with a photoresist layer (Cf Col 5). A second

Art Unit: 3729

photoresist layer (Cf. Fig.6B and related specification) shows a second photoresist layer which replaces the first photoresist layer and which exposes the previously formed opening in the Nitride layer. The Silicon dioxide beneath the opening is etched away to provide an opening in that layer. The photoresist layer is removed and a pit is etched with KOH or EDP to form a pit. The pit is then filled with vapor deposited W. Then according to the evidence disclosed in Col 6, a conductive coating such as 52 is also formed and is connected to the tip (Cf. also 6 E) Subsequently the tip structure is released from the substrate. It would be obvious to e.g. deposit at least one layer of conductive material onto the surface of a substrate assuming that the nitride layer (which is species of a cantilever) and is taught by Carver. The reason for the obviousness is that one desires a material which has releasing qualities and would also have strength whenever the completed tip assembly is removed from the substrate and therefore metal (as well as Silicon Nitride) would fit these criteria. As applied to claim 40 it is held that if Carver does not expressly teach the contact structures to be resilient, one can reasonably infer that the contact structures are indeed resilient. What is it that Carver is making--- A microminature tip assembly. That is the assembly has to be small and also resilient. As applied to Claim 42 it would have been obvious to dispose this resilient contact structure on a space transformer inasmuch as Carver provides ample evidence that these microminature tips has a number of uses in the scientific and engineering technologies (Cf. Col 1) Moreover it is alternatively held the limitation is given little weight since this is an article limitation in a method claim 45 it is held to be mere design choice to provide a plurality of tip structures on the sacrificial substrate


Art Unit: 3729

wherein the tip structures are joined to the contact structures (Cf. e.g. Fig 5 and related disclosure) since Applicants have provided no specific purpose therefore nor have they solved any particular problem thereby. As applied to Claim 48 it is also held to have been mere design choice to provide a plurality of layers for the tip material since Applicants have not solved any specific problem thereby nor is there any particular purpose therefore. As applied to Claims 50 and 51 it is held to be old and hence obvious to bond and overcoating the wires from the contact structures to a substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. J. Arbes whose telephone number is 571-272-4563. The examiner can normally be reached on M, T, R and F from 8 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Vo, can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CARL J. ARBES
PRIMARY EXAMINER